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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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HARNESSE, DICKEY & PIERCE, P.L.C.			COLLINS, GIOVANNA M	
P.O. BOX 828			ART UNIT	
BLOOMFIELD HILLS, MI 48303			PAPER NUMBER	

3672

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/674,195	MEIERHOFER, MARKUS	
	Examiner	Art Unit	
	Giovanna M. Collins	3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8-26,28 and 30-38 is/are rejected.
- 7) ☒ Claim(s) 2,7,27 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6,8-11, and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over International Patent WO 0166899 to Peetz in view of Huber 6,702,047.

Referring to claims 1,4,8, Peetz discloses (fig 1a-1c) a masonry or rock drilling tool suitable for use with a rotary hammer comprising: a drilling head (2) at a forward end of the tool, a forwardly extending cutting plate(22) formed with said drilling head, first and second opposing axially extending channels (elements 35 on either side of cutting plate 22) formed on the circumferential periphery of said drilling head; a clamping shank (12) at a rearward end of the tool suitable for fitment within a tool holder of a rotary hammer, an intermediate helical conveying portion extending between the drilling head and the clamping shank, four helically extending flutes (17-20) separated by corresponding helically extending webs (6-9) formed on said intermediate helical conveying portion; and said first axially extending channel (element 35 on left) extends axially rearwardly from a forward facing face of the drilling head into a pair of the at least four flutes and said second axially (element 35 on right) extending channel

Art Unit: 3672

extends axially rearwardly from the forward facing face of the drilling head the remaining pair of the at least four flutes. Peetz a central chiseling dome having cutting edge with a varying acute angle. Huber teaches (fig. 4) a drill bit with a elliptical central chiseling dome (at 11) with major axis parallel to cutting edge and a pair of cutting edges (4) extending radially outwardly from the chiseling dome formed on said cutting plate, each cutting edge has a trailing relief face and an acute angle between the relief face and the longitudinal axis of the tool varies from a radially inner portion to a radially outer end of each cutting edge. Huber teaches the design allows favorable chiseling action without fear of chipping cutting edges (col. 2, lines 55-57). As it would be advantageous to have favorable chiseling action with out chipping the cutting edges, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the tool disclosed by Peetz and central chisel dome with a cutting edge having a varying angle in view of the teachings of Huber.

Referring to claim 3, Peetz discloses the webs (6-9) that separate the flutes each terminates at a location circumferentially central of the associated extending channel.

Referring to claims 5, Peetz disclose the cutting plate extends across the drilling head and the first channel (35) is formed on a first side and the second channel is formed on an opposite side.

Referring to claims 6, Peetz disclose cutting edge (32) forms a boundary between a cutting face (33) and a relief face (31).

Referring to claims 9-10, Peetz does not specifically disclose the channels (elements 35) extend between 35-70 % of the surface of the drilling head and have

Art Unit: 3672

bases with a diameter of between 40 and 80 % of the diameter of the drilling head.

However, it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum range or workable ranges involves only routine

skill in the art. In re Killing, 895 F.2d 1147, 14 USPQ2d 1056. Therefore it would be

obvious to one of ordinary skill in the art to further modify the tool disclosed by Peetz as modified by Huber to have the channels extend between 35-70 % of the surface of the

drilling head and have bases with a diameter of between 40 and 80 % of the diameter

of the drilling head because where the general conditions of a claim are disclosed in the prior art discovering the optimum range or workable ranges involves only routine skill in

the art.

Referring to claim 11, Peetz disclose the channels (35) are substantially parallel to the longitudinal axis.

Referring to claim 19, Peetz disclose the webs have a radially outward facing surface (13-16).

Referring to claim 18, Peetz disclose two primary (6,7) and two auxiliary (8-9) webs.

Referring to claim 20, Peetz discloses the auxiliary webs (8,9) come to appoint at here radial outer ends (see fig. 1b at 8).

Referring to claim 21, Peetz disclose the auxiliary webs (8,9) separate the flutes into each extending channels (35) and the auxiliary web terminate in a circumferentially central portion of the corresponding channel.

3. Claims 1, 3-6,8-11, and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obermeier 5,487,434 in view of Huber 6,702,047.

Referring to claims 1,4,8, Obermeier discloses (fig 1) a masonry or rock drilling tool suitable for use with a rotary hammer comprising: a drilling head (2) at a forward end of the tool, a forwardly extending cutting plate(2a) formed with said drilling head, first and second opposing axially extending channels (area below element 2 on both sides of cutting plate 2a) formed on the circumferential periphery of said drilling head; a clamping shank (1) at a rearward end of the tool suitable for fitment within a tool holder of a rotary hammer, an intermediate helical conveying portion extending between the drilling head and the clamping shank, four helically extending flutes (3-4) separated by corresponding helically extending webs (7-10) formed on said intermediate helical conveying portion; and said first axially extending channel (area below element 2 on one side) extends axially rearwardly from a forward facing face of the drilling head into a pair of the at least four flutes and said second axially (area below element 2 on opposite) extending channel extends axially rearwardly from the forward facing face of the drilling head the remaining pair of the at least four flutes. Huber teaches (fig. 4) a drill bit with a elliptical central chiseling dome (at 11) with major axis parallel to cutting edge and a pair of cutting edges (4) extending radially outwardly from the chiseling dome formed on said cutting plate, each cutting edge has a trailing relief face and an acute angle between the relief face and the longitudinal axis of the tool varies from a radially inner portion to a radially outer end of each cutting edge. Huber teaches the design allows favorable chiseling action without fear of chipping cutting edges (col. 2,

lines 55-57). As it would be advantageous to have favorable chiseling action with out chipping the cutting edges, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the tool disclosed by Obermeier and central chisel dome with a cutting edge having a varying angle in view of the teachings of Huber.

Referring to claim 3, Obermeier discloses the webs (7-10) that separate the flutes each terminates at a location circumferentially central of the associated extending channel.

Referring to claims 5, Obermeier disclose the cutting plate extends across the drilling head and the first channel (area below element 2 on one side) is formed on a first side and the second channel (area below element 2 on opposite) is formed on an opposite side.

Referring to claims 6, Huber teaches cutting edge (4) forms a boundary between a cutting face (5) and a relief face (at 12).

Referring to claims 9-10, Obermeier does not specifically disclose the channels (elements 35) extend between 35-70 % of the surface of the drilling head and have bases with a diameter of between 40 and 80 % of the diameter of the drilling head. However, it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum range or workable ranges involves only routine skill in the art. In re Killing, 895 F.2d 1147, 14 USPQ2d 1056. Therefore it would be obvious to one of ordinary skill in the art to further modify the tool disclosed by Obermeier as modified by Huber to have the channels extend between 35-70 % of the surface of the drilling head and have bases with a diameter of between 40 and 80 % of

the diameter of the drilling head because where the general conditions of a claim are disclosed in the prior art discovering the optimum range or workable ranges involves only routine skill in the art.

Referring to claim 11, Obermeier disclose the channels (area below element 2) are substantially parallel to the longitudinal axis.

Referring to claim 16, Obermeier disclose the four webs (7-10) have the same diameter.

Referring to claim 17, Obermeier discloses the webs (7-10) have a radially outward facing surface.

4. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over International Patent WO 0166899 to Peetz as applied to claim 1 and further in view of Rumpp 5,265,688.

Referring to claims 12-15, Peetz does not disclose the channels are concave, auxiliary cutters or an auxiliary channel. Rump teaches (fig.1) a drilling tool with an axial extending channel (at 6) that is concave, and auxiliary cutters (5) that trail a cutting edge of a cutting plate (7) in the direction of rotation and an auxiliary channel (10). Rump teaches the channels are used to convey drillings from the end face toward the shank (col. 2, lines 47-51) and the cutter help to break additional material. As it would be advantageous to convey drillings from the drilling end face and to help further break material, it would be obvious to one of ordinary skill in the art at the time of the invention to further modify the tool disclosed by Peetz, as modified by Huber to have the concave

primary channels, auxiliary channels and auxiliary cutters in view of the teachings of Rumpp.

5. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obermeier '434 as applied to claim 1 and further in view of Rumpp 5,265,688.

Referring to claims 12-15, Obermeier does not disclose the channels are concave, auxiliary cutters or an auxiliary channel. Rumpp teaches (fig.1) a drilling tool with an axial extending channel (at 6) that is concave, and auxiliary cutters (5) that trail a cutting edge of a cutting plate (7) in the direction of rotation and an auxiliary channel (10). Rumpp teaches the channels are used to convey drillings from the end face toward the shank (col. 2, lines 47-51) and the cutter help to break additional material. As it would be advantageous to convey drillings from the drilling end face and to help further break material, it would be obvious to one of ordinary skill in the art at the time of the invention to further modify the tool disclosed by Obermeier, as modified by Huber to have the concave primary channels, auxiliary channels and auxiliary cutters in view of the teachings of Rumpp.

6. Claims 22-25 and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over International Patent WO 0166899 to Peetz in view of Rumpp 5,265,688.

Referring to claims 22,24, and 34-36, Peetz discloses (fig 1a-1c) a masonry or rock drilling tool suitable for use with a rotary hammer comprising: a drilling head (2) at

Art Unit: 3672

a forward end of the tool, a forwardly extending cutting plate(22) formed with said drilling head, first and second opposing axially extending channels (elements 35 on either side of cutting plate 22) formed on the circumferential periphery of said drilling head; a clamping shank (12) at a rearward end of the tool suitable for fitment within a tool holder of a rotary hammer, an intermediate helical conveying portion extending between the drilling head and the clamping shank, four helically extending flutes (17-20) separated by corresponding helically extending webs (6-9) formed on said intermediate helical conveying portion; and said first axially extending channel (element 35 on left) extends axially rearwardly from a forward facing face of the drilling head into a pair of the at least four flutes and said second axially (element 35 on right) extending channel extends axially rearwardly from the forward facing face of the drilling head the remaining pair of the at least four flutes. Peetz does not disclose the channels are concave, auxiliary cutters or an auxiliary channel. Rump teaches (fig.1) a drilling tool with an axial extending channel (at 6) that is concave, and auxiliary cutters (5) that trail a cutting edge of a cutting plate (7) in the direction of rotation and an auxiliary channel (10). Rump teaches the channels are used to convey drillings from the end face toward the shank (col. 2, lines 47-51) and the cutter help to break additional material. As it would be advantageous to convey drillings from the drilling end face and to help further break material, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the tool disclosed by Peetz to have the concave primary channels, auxiliary channels and auxiliary cutters in view of the teachings of Rump.

Referring to claim 23, Peetz discloses the webs (6-9) that separate the flutes each terminates at a location circumferentially central of the associated extending channel.

Referring to claim 25, Peetz disclose the cutting plate extends across the drilling head and the first channel (element 35 on left) is formed on a first side and the second channel (element 35 on right) is formed on an opposite side.

Referring to claims 31-32, Peetz does not specifically disclose the channels (elements 35) extend between 35-70 % of the surface of the drilling head and have bases with a diameter of between 40 and 80 % of the diameter of the drilling head. However, it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum range or workable ranges involves only routine skill in the art. In re Killing, 895 F.2d 1147, 14 USPQ2d 1056. Therefore it would be obvious to one of ordinary skill in the art to modify the tool disclosed by Peetz to have the channels extend between 35-70 % of the surface of the drilling head and have bases with a diameter of between 40 and 80 % of the diameter of the drilling head because where the general conditions of a claim are disclosed in the prior art discovering the optimum range or workable ranges involves only routine skill in the art.

Referring to claim 33, Peetz disclose the channels (at 35) are substantially parallel to the longitudinal axis.

7. Claims 22-25 and 31-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obermeier 5,487,434 in view of Rumpp 5,265,688.

Referring to claims 22, 24 and 34-36, Obermeier discloses (fig 1) a masonry or rock drilling tool suitable for use with a rotary hammer comprising: a drilling head (2) at a forward end of the tool, a forwardly extending cutting plate(2a) formed with said drilling head, first and second opposing axially extending channels (area below element 2 on both sides of cutting plate 2a) formed on the circumferential periphery of said drilling head; a clamping shank (1) at a rearward end of the tool suitable for fitment within a tool holder of a rotary hammer, an intermediate helical conveying portion extending between the drilling head and the clamping shank, four helically extending flutes (3-4) separated by corresponding helically extending webs (7-10) formed on said intermediate helical conveying portion; and said first axially extending channel (area below element 2 on one side) extends axially rearwardly from a forward facing face of the drilling head into a pair of the at least four flutes and said second axially (area below element 2 on opposite) extending channel extends axially rearwardly from the forward facing face of the drilling head the remaining pair of the at least four flutes. Obermeier does not disclose the channels are concave, auxiliary cutters or an auxiliary channel. Rump teaches (fig.1) a drilling tool with an axial extending channel (at 6) that is concave, and auxiliary cutters (5) that trail a cutting edge of a cutting plate (7) in the direction of rotation and an auxiliary channel (10). Rump teaches the channels are used to convey drillings from the end face toward the shank (col. 2, lines 47-51) and the cutter help to break additional material. As it would be advantageous to convey drillings from the drilling end face and to help further break material, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the tool disclosed by

Obermeier to have the concave primary channels, auxiliary channels and auxiliary cutters in view of the teachings of Rumpp.

Referring to claim 23, Obermeier discloses the webs (7-10) that separate the flutes each terminates at a location circumferentially central of the associated extending channel.

Referring to claim 25, Obermeier disclose the cutting plate extends across the drilling head and the first channel (area below element 2 on one side) is formed on a first side and the second channel (area below element 2 on opposite) is formed on an opposite side.

Referring to claims 31-32, Obermeier does not specifically disclose the channels (elements 35) extend between 35-70 % of the surface of the drilling head and have bases with a diameter of between 40 and 80 % of the diameter of the drilling head. However, it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum range or workable ranges involves only routine skill in the art. In re Killing, 895 F.2d 1147, 14 USPQ2d 1056. Therefore it would be obvious to one of ordinary skill in the art to modify the tool disclosed by Obermeier to have the channels extend between 35-70 % of the surface of the drilling head and have bases with a diameter of between 40 and 80 % of the diameter of the drilling head because where the general conditions of a claim are disclosed in the prior art discovering the optimum range or workable ranges involves only routine skill in the art.

Referring to claim 33, Obermeier disclose the channels (area below element 2) are substantially parallel to the longitudinal axis.

Referring to claim 37, Obermeier disclose the four webs (7-10) have the same diameter.

Referring to claim 38, Obermeier discloses the webs (7-10) have a radially outward facing surface.

8. Claims 26, 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over International Patent WO 0166899 to Peetz in view of Rumpp 5,265,688, as applied to claim 22 and further in view of Huber 6,702,047.

Referring to claims 26 and 30, Peetz discloses a pair of cutting edges (32) extending radially outwardly from the chiseling dome formed on said cutting plate, each cutting edge has a trailing relief face and an acute angle between the relief face (31) but does not disclose the cutting plate has a central chiseling dome and the cutting edges extends from the dome. Huber teaches (fig. 4) a drill bit with a elliptical central chiseling dome (at 11) with major axis parallel to cutting edge and a pair of cutting edges (4) extending radially outwardly from the chiseling dome formed on said cutting plate, each cutting edge has a trailing relief face and an acute angle between the relief face and the longitudinal axis of the tool varies from a radially inner portion to a radially outer end of each cutting edge. Huber teaches the design allows favorable chiseling action without fear of chipping cutting edges (col. 2, lines 55-57). As it would be advantageous to have favorable chiseling action with out chipping the cutting edges, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the tool disclosed by

Art Unit: 3672

Peetz and central chisel dome with a cutting edge having a varying angle in view of the teachings of Huber.

Referring to claim 28, Peetz discloses cutting edge (32) forms a boundary between a cutting face (33) and a relief face (31).

9. Claims 26, 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obermeier '434 in view of Rumpff 5,265,688, as applied to claim 22 and further in view of Huber 6,702,047.

Referring to claims 26 and 30, Obermeier does not disclose the cutting plate has a central chiseling dome and the cutting edges extends from the dome. Kleine teaches a cutting plate with a chiseling dome (at 11) and a pair of cutting edges (7) extending radially outward from the dome here the cutting edges has a trailing relief face. Huber teaches (fig. 4) a drill bit with a elliptical central chiseling dome (at 11) with major axis parallel to cutting edge and a pair of cutting edges (4) extending radially outwardly from the chiseling dome formed on said cutting plate, each cutting edge has a trailing relief face and an acute angle between the relief face and the longitudinal axis of the tool varies from a radially inner portion to a radially outer end of each cutting edge. Huber teaches the design allows favorable chiseling action without fear of chipping cutting edges (col. 2, lines 55-57). As it would be advantageous to have favorable chiseling action with out chipping the cutting edges, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the tool disclosed by Obermeier and central

chisel dome with a cutting edge having a varying angle in view of the teachings of Huber.

Referring to claim 28, Huber teaches cutting edge (4) forms a boundary between a cutting face (5) and a relief face (at 12).

Allowable Subject Matter

10. Claims 2,7,27 and 29 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant's arguments with respect to claims 1,3-6,8-26,28,30-38 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Giovanna M. Collins whose telephone number is 571-272-7027. The examiner can normally be reached on 6:30-3 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3672

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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